

# Family Factors Associated With the Peer Social Competence of Young Children With Mild Delays

Michael J. Guralnick, Brian Neville, Robert T. Connor, and Mary A. Hammond  
Center on Human Development and Disability, University of Washington

## Abstract

A model addressing family influences on the peer-related social competence of young children with mild developmental (cognitive) delays was developed and tested. Constructs representing child peer competence, types of parent action (arranging play for their child and socialization strategies varying in degree of control or power), parent attitudes (beliefs as to the degree their child's peer interactions could be influenced by external actions), parent stress, social support, and child risk were examined. Path analytic techniques were used to evaluate the model. Results supported the importance of family influences on the peer-related social competence of young children with mild developmental delays. With the exception of parent attitude, all theoretical constructs were retained in the analysis and significant paths followed predicted relationships.

By the time young children with mild developmental (cognitive) delays reach preschool age, unusual difficulties in establishing relationships with peers and forming friendships are evident (Guralnick, 1990, 1999a). These difficulties are apparent in various playgroup and community settings and affect virtually every aspect of children's interactions with peers. In particular, in comparison to typically developing chronological age (CA) mates, children with mild delays experience difficulties initiating activities and entering peer groups (Guralnick & Groom, 1987; Wilson, 1999); fail to sustain socially interactive play, frequently engaging in solitary forms of play (Guralnick, Connor, Hammond, Goffman, & Kinnish, 1996; Guralnick & Groom, 1987; Kopp, Baker, & Brown, 1992); and exhibit inappropriate patterns of problem-solving during conflict episodes, revealing a confrontational and nonconciliatory orientation (Guralnick & Paul-Brown, 1989; Guralnick et al., 1998). As expected, these peer social competence difficulties are associated with lower levels of peer acceptance (Guralnick & Groom, 1987; Guralnick, Connor et al., 1996), restricted linkages between social partners in school and

community settings (Guralnick, 1997), and limited reciprocal friendships (Guralnick, Gottman, & Hammond, 1996; Guralnick & Groom, 1988). Of consequence, most of these patterns remain even after controlling for children's developmental levels (Guralnick, 1999b). This suggests that these difficulties correspond to characteristics related to children's developmental status (i.e., the disability of mild cognitive delay) and not simply developmental level.

The sources of these difficulties are certainly multidimensional. Child-specific cognitive and language factors associated with children's developmental delays that can substantially compromise peer social competence include those related to attention (Tomporowski & Tinsley, 1997); information processing (Kopp, 1990; Lincoln, Courchesne, Kilman, & Galambos, 1985); expressive language (Miller, 1987); and working memory, especially in relation to scripts (Bray, Fletcher, & Turner, 1997).

In addition to these child-specific factors, recent research and conceptual models have pointed to the influence of family factors. In fact, researchers who primarily study typically develop-

ing children have identified a number of important family-peer linkages (Parke, Burks, Carson, Neville, & Boyum, 1994; Parke & Ladd, 1992). Indirect linkages, particularly associations between parent-child and child-child interactions have been examined. Evidence suggests that parent-child interactions indexed by parental sensitivity and reciprocity, consistent affective patterns, moderate levels of control, and the use of discourse-based strategies of interaction and negotiation are positively associated with children's peer-related social competence (Guralnick & Neville, 1997; Isley, O'Neil, Clatfelter, & Parke, 1999; LaFreniere & Dumas, 1992; Mize & Pettit, 1997; Putallaz, 1987). Moreover, a number of socioemotional and social-cognitive processes have been identified that appear to mediate this association (see Parke et al., 1994).

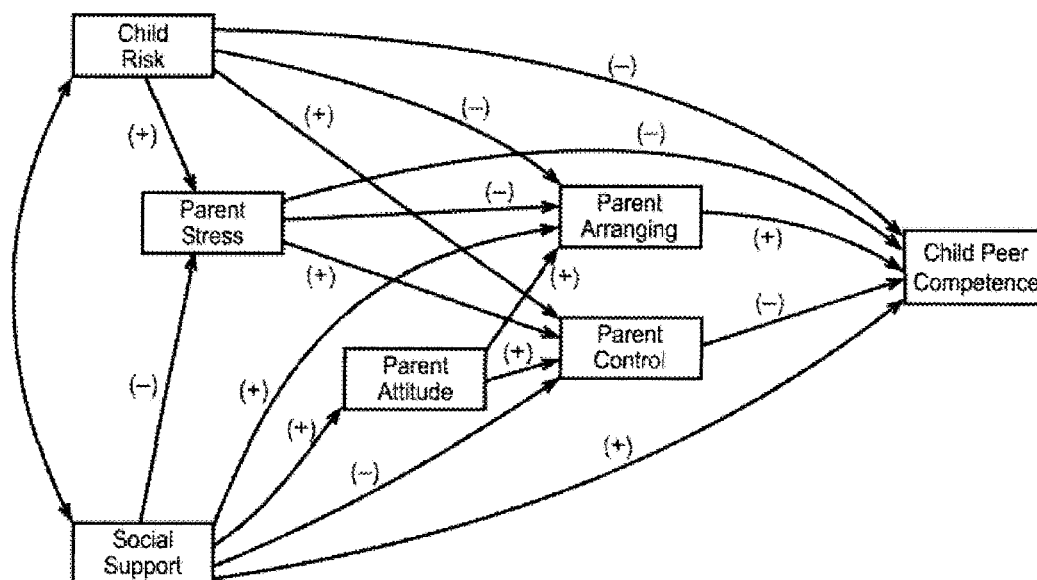
Parents, however, also influence their children's competence with peers through more direct parent actions specific to the peer situation. In particular, when directly involved in providing instruction or advice in challenging situations, such as peer group entry (see Mize, Pettit, & Brown, 1995), available evidence indicates that the quality of the socialization strategies carried out by mothers is associated with their children's peer-related social competence, with more controlling high power types of strategies related to lower levels of peer competence (Finnie & Russell, 1988; Russell & Finnie, 1990). More high power socialization strategies are also endorsed by parents whose children exhibit behavior problems (Rubin & Mills, 1990). To some extent, these parental patterns may represent a response to their child's problematic social skills. Nevertheless, a continuing pattern of actively invoking high power socialization strategies by parents is likely to be counterproductive, further limiting their child's developing competence with peers (LaFreniere & Dumas, 1992). In addition to variations in socialization strategies, parents also differ in terms of actively arranging play opportunities for their child. A more active arranging pattern is associated with larger peer-social networks and, at least for boys, higher levels of social competence as reflected by peer sociometric ratings (Ladd & Golter, 1988; Ladd & Hart, 1992).

Direct parental action designed to promote children's peer-related social competence requires a considerable investment of parental resources. Especially given the pace and demands of contemporary life, arranging peer play activities as

well as providing timely instructional guidance and advice on socialization strategies in peer play situations are tasks that often extend beyond typical family activities and interaction patterns. Indeed, as many as half of even middle-class families do not arrange social contacts for their child (Ladd & Golter, 1988). For parents who are active, it would be expected that they consider the development of their child's peer-related social competence to be quite important and believe that they can influence its developmental course. Research confirms that these attitudinal expectations, indexed by perceptions of importance and the degree to which parents believe their child's social development is determined by external (e.g., parental efforts) rather than internal causes (traits of child, maturation), are factors most consistently associated with parent arranging and children's peer-related social competence (Ladd & Hart, 1992; Mize et al., 1995; Rubin, Mills, & Rose-Krasnor, 1989). The relationship between attitudes and parent action as indexed by the form of socialization strategies parents employ is not as clear, although there is some evidence linking internal causes and lack of strategy use (Mills & Rubin, 1990).

Parent attitude and socialization strategies related to control issues may be affected by other family factors, particularly those related to family risk. In fact, Mills and Rubin (1990) noted that in certain contexts, low social support was associated with higher power socialization strategies and contributed to the association between internal causes and lack of parent action. Correspondingly, low social support is associated with less optimal mother-child interactions (e.g., Jennings, Stagg, & Connors, 1991). As discussed earlier, this pattern of mother-child interactions may have an indirect adverse effect on peer competence. More directly relevant findings reveal that social support is related to child competence and appears to exert its effect on both mother-child interactions and child competence primarily when families are stressed by social disadvantage or child cognitive ability (Ball & Pianta, 1993; Pianta & Ball, 1993). Consequently, social support must be considered in models involving parental influence on children's competence with peers and may operate by contributing to or failing to mitigate stress that serves to limit a family's ability to foster and support their child's peer competence.

Accordingly, for families of typically developing children, available evidence suggests that



**Figure 1.** Theoretical model for predictors of child peer competence.

important linkages exist between family characteristics and patterns of interaction and children's competence with peers. This is particularly the case for direct parent actions, such as arranging play with peers or advising or instructing their children in the use of specific socialization strategies to improve peer competence. Parental attitudes, especially with respect to the determinants of the course of their child's social development with peers (i.e., internal vs. external), may constitute the parental cognitive system guiding, in part, parent actions. To some degree these linkages can be understood as responses to child characteristics, such as language ability, but specific forms of parent-child interaction patterns, nevertheless, appear to make distinctive contributions to children's peer competence (Mize & Pettit, 1997). As noted, the broader ecological context must also be considered when evaluating family influences on peer competence, including parent stress and social support.

Unfortunately, only limited research on possible family influences on children's competence with peers is available for young children with developmental delays, despite the substantial peer competence problems experienced by this group described earlier. What information is available indicates that mothers of children with mild developmental delays arrange play less often than do mothers of typically developing children (Guralnick, Connor, Neville, & Hammond, 2002; Kopp, Baker, & Brown, 1992). Although the extent to

which parents endorse socialization strategies varying in power in relation to children's peer competence has not been evaluated, the use of direct teaching strategies appears to be unrelated to children's competence with peers (Booth, 1999; Kopp et al., 1992). Moreover, for attitudinal factors, rated importance of children's peer social skill development by parents is only modestly associated with endorsed use of direct socialization strategies, but beliefs in external or internal causes are not, at least for heterogeneous groups of children with disabilities (Booth, 1999). Although these investigations provide valuable information on attitudes and parent actions for young children with developmental delays and disabilities, additional work is essential to understand the relationships among these constructs and their connections to children's competence with peers. In particular, the development and justification of linkages in a formal model may begin to clarify the nature of the patterns of parent influence for young children with delays and yield important implications for intervention approaches.

### The Model

Accordingly, our purpose in this investigation is to present and evaluate a model representing parent influences on children's social competence with their peers for a group of children with mild developmental delays. The theoretical model presented in Figure 1 draws upon the conceptuali-

zations and empirical work with typically developing children discussed earlier and integrates developmental approaches that consider the specific characteristics of children with developmental delays (Guralnick & Neville, 1997). The model considers the following seven constructs: child peer competence, two types of parent action (arranging and control), parent attitude, parent stress, social support, and child risk. Path analytic techniques will be used to test the model.

As seen in Figure 1, we expected that the two types of parent action will have different effects on children's peer competence. It is reasonable to anticipate that, overall, parents who arrange play for children more frequently will help advance their child's opportunities to develop higher levels of competence with peers (see positive path in Figure 1). Moreover, no evidence suggests that parents attempt to arrange play more often for less socially skillful children as a compensatory effort (Guralnick et al., 2002; Ladd & Golter, 1988; Mize et al., 1995). In contrast, for the second form of parent action (control), considerable evidence suggests that more controlling, higher power socialization strategies are expected to be associated with children's lower peer competence (see negative path in Figure 1).

Parent stress constitutes a central construct in the model, potentially affecting parent actions as well as related activities that can directly influence children's peer-related social competence. Parents of children with even mild disabilities undergo a process of adjustments and accommodations in relation to their child's disabilities on an ongoing basis (Gallimore, Coots, Weisner, Garnier, & Guthrie, 1996). For the most part, these adjustments are adaptive and serve to promote child development, but nonadaptive family patterns also can arise, resulting in perturbations in optimal parent-child interactions (Guralnick, 1998). Moreover, stressors associated with a child's disability can elicit perceptions that reflect a lack of confidence in parenting ability, feelings of isolation and role restriction, general malaise about their life situation, and adverse health, among others. Available evidence indicates that parents of children with disabilities do experience more stress along these and related dimensions than do parents of typically developing children (Dyson, 1991; Roach, Orsmond, & Barratt, 1999).

Parent actions in relation to their children's peer-related social competence may be affected in a number of ways by increased stress levels. First,

increased stress may constrain parents from arranging peer play experiences for their child and likely limit opportunities for their child to further develop their social skills (negative sign on path). As noted, mothers of children with delays similar to those in this study do, in fact, arrange play for their children less often than do mothers of typically developing children (Guralnick et al., 2002). Second, increased stress may lead parents to use more controlling socialization strategies to promote their child's participation in peer play (positive sign on path). At least for a subgroup, more intrusive or controlling patterns of parent-child interactions in general have been reported for parents of children with disabilities (see Mahoney, Fors, & Wood, 1990). Finally, increased stress is not only likely to affect the two types of parent actions, but general parent-child interactions as well. Although not measured in this study, difficult parent-child interactions can have an adverse effect on children's social competence with peers (see negative path from stress to peer social competence) (Guralnick & Neville, 1997).

We also expected parent stress itself to be affected by two constructs in the model. For children with disabilities, social support, especially informal support, appears to exert a protective influence on parent stress (see negative path) (Beckman, 1991; Dunst, Trivette, & Cross, 1986; Floyd & Phillippe, 1993; Kazak & Marvin, 1984; Krauss, 1993). In addition, social support may directly affect parent-child interactions (not measured) in a manner similar to parent stress, thereby having a direct effect on peer social competence in the model (see positive path). Similarly, although a weak hypothesis, higher levels of social support may encourage parents to hold more external rationales (see positive path), with the consequence of increasing their willingness to engage in various forms of parent action. In a similar manner, support may indirectly affect peer competence by influencing parent action (i.e., higher support, more arranging—see positive path; higher support, less controlling socialization strategies—see negative path) (see Mills & Rubin, 1990).

Child risk, as indexed by cognitive and language development, was also expected to influence parent stress (Booth, 1999; Frey, Greenberg, & Fewell, 1989). As noted earlier, parents of children with disabilities experience higher levels of stress than do parents of typically developing children (e.g., Roach et al., 1996). Nevertheless, the higher child risk-higher stress (see positive path)

connection must be considered a weak hypothesis because the relationship between child risk and parent stress is not always found within groups for children similar to those in this study (Gallimore et al., 1996) or for heterogeneous groups of children with disabilities (Krauss, 1993). Consistent evidence has been found, however, for the connection between child risk and peer competence (see negative path) (Booth, 1999; Guralnick & Groom, 1985). Moreover, despite somewhat inconsistent evidence (see Booth, 1999), we also expected that child risk would influence parent action directly, making it more difficult for parents to arrange play experiences (see negative path) but endorsing more controlling strategies (see positive path).

Finally, we expected that parent attitude will affect parent action. Specifically, parents holding external rationales with respect to why children develop peer competence would be more likely to be active in fostering their child's peer-related social competence (i.e., more arranging and more controlling strategies; see positive paths). Some evidence exists to support this relationship (Mills & Rubin, 1990). However, in a much smaller sample, but similar to the one in this study, no relationship was found between parent attitude and parent actions (Guralnick et al., 2002). Despite this inconsistency, the positive relationship between parent attitude and parent action is nevertheless put forward.

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## Method

### *Participants*

Young children with developmental (cognitive) delays were recruited through contact with local school districts in a large metropolitan community. Participating school districts distributed announcements describing an opportunity to participate in a research project intended to promote children's peer relations and friendships. Information was sent to all parents whose children had an Individualized Education Program (IEP) and who attended an inclusive (i.e., mainstreamed) preschool or kindergarten. Parents who were interested in participating in the study contacted project staff directly, who then initiated a screening and identification process. To be included in the sample, a child had to meet the following criteria: (a) be between 48 and 78 months of age, (b) have a current IEP, (c) be experiencing difficulties in peer-related social competence as expressed by

parent concerns in a structured phone interview, (d) have a primary female caregiver (hereafter referred to only as mother; minimum of a 6-month relationship because mothers were our primary informants), and (e) obtain a Full-Scale IQ (FSIQ) between 52 and 90 on the Wechsler Preschool and Primary Scale of Intelligence-Revised-WPPSI-R (Wechsler, 1989). A number of exclusionary criteria also were established. Based on the Child Behavior Checklist (Achenbach & Edelbrock, 1983) completed by the mother (or other female caregiver) for each child (see below), children who scored in the clinical range were excluded from the study (a *T* score above 70 was established for children with developmental delays). Similarly, based on the Parenting Stress Index (Abidin, 1995) Finally, children were excluded if English was not their primary language or if they had significant sensory or motor problems. Taken together, recruitment using these criteria yielded a sample of children varying in terms of cognitive level who were receiving services as indicated by the existence of IEPs but did not exhibit significant problems in behavioral, sensory, or motor domains.

Over a period of 4 years, 74 families met these criteria. Children's mean age was 5.22 years, with 53% enrolled in preschool and 47% in kindergarten. Approximately 75% of the children were male and 76% were Caucasian. Families were primarily middle income, had some college education, most were partnered (89.2%), and nearly 60% of mothers were employed outside the home.

### *Procedures*

Children's cognitive and language development was individually evaluated using standardized instruments. Families whose children met all criteria received a packet of materials in the mail containing various questionnaires and scales (see below). Individual appointments with the mothers were then scheduled for the interview portion of the study. Interviews took place at the university and required approximately 1.5 hours. Based on a series of scales and surveys, mothers provided information with respect to their child's development and social competence. Moreover, based on interviews and mailed materials, a series of parent measures provided information with respect to family demographics, levels of stress and social support, attitudes with respect to the rationale for children's social development with peers, the socialization strategies differing in control that

mothers endorse to promote peer relationships, and the extent to which mothers arrange play experiences for their child.

### Measures

*Individual child assessment of cognition and language.* Children were evaluated by psychologists with extensive experience working with young children with developmental delays. The child's behavior during the evaluation was carefully observed, and breaks were taken often in order to promote optimal performance. On occasion, testing took place over 2 days if the child's performance so warranted. Parents were encouraged to observe the testing session, and comments about their child's performance were solicited after the evaluation in order to estimate the validity of the assessment.

The WPPSI-R was administered individually to each child. Full Scale IQs (FSIQs) as well as performance (PIQ) and verbal (VIQ) scores were obtained, but only the FSIQ was used in this study. Receptive language ability was measured with the Test for Auditory Comprehension of Language—Revised (Carrow-Woolfolk, 1985). This instrument is a standardized, individually administered test of receptive language skills for children ages 3 years through 9.92 years. Each item consists of a word or sentence that is read by the examiner, and the child is shown an accompanying picture of three line drawings (the orally presented item and two distracters). The test yields four standardized scores: (a) word classes and relations, (b) grammatical morphemes, (c) elaborated sentences, and (d) a total score. The total score was used in the study. Finally, expressive language ability was measured with the Expressive One Word Picture Vocabulary Test—Revised (Gardner, 1990). This test consists of 100 pictures that are presented individually to the child. Each item requires the child to recognize and verbally label the figure(s) contained in the picture. The standard score was used in this study.

*Parent ratings of child development and social competence.* To provide an estimate of children's adaptive behavior, trained interviewers administered the Vineland Adaptive Behavior Scales (Sparrow, Balla, & Cicchetti, 1984) to each mother. Standard scores were obtained for each of the four domains (Communication, Daily Living Skills, Socialization, and Motor Skills) as well as for the total adaptive behavior score. Only the

Socialization scale was used in this study,  $\alpha = .79$ .

Mothers completed the parent form of the Social Skills Rating System (Gresham & Elliott, 1990). On the Social Skills Rating System—Parent version (Preschool Level or Elementary Level), the mother rated the occurrence of particular social skills using a 3-point scale with respect to how often she saw the skill demonstrated by her child (0 = *never*, 1 = *sometimes*, 2 = *very often*). In addition, mothers rated how important each social skill is for their child's development using a 3-point scale: (0 = *not important*, 1 = *important*, 2 = *critical*). Internal consistency coefficients ( $\alpha$ ) from the standardization sample ranged from .87 to .90, although those for the Preschool Level were based on the tryout sample. Internal consistency for this sample was .86. Mothers' responses were summed across all items to obtain a total raw score that was converted to a single standardized score and used in this study.

Finally, a set of questions contained in the Parent Social Skills Interview (adapted from Booth, Rubin, & Rose-Krasnor, 1986), focusing on mothers' perceptions of their child's social competence with peers, also was included. For each of three social tasks (make friends, share toys and possessions, gain acceptance into a new group of children), mothers were asked: "Do you think your child's ability to \_\_\_\_ (3 tasks) is below average (score of 1), average (score of 2), or above average (score of 3) compared to other children his/her age?" Scores were averaged across the three social tasks because these tasks constitute critical indices of peer-related social competence (Guralnick, 1999a). However, internal consistency for this measure was only .44.

*Parent attitude.* In a second section of the Parent Social Skills Interview, each of the three primary social tasks (make friends, share, accepted into new group) was revisited with a set of questions designed to elicit parental perceptions of the reasons why (rationale) children may or may not be successful in peer relationships. This set of questions was phrased in terms of children in general rather than in relation to their own child to establish a common frame of reference. Specifically, mothers were asked to describe the two most important reasons why children might be "really good" with respect to each of the three social tasks. These questions were repeated in relation to why children might "have trouble" with each of

the three social tasks. Mothers responses were recorded in writing by the interviewer.

Based on prior work (Booth, 1999; Mize et al., 1995), we developed a coding manual to categorize the reasons mothers judged children to be successful (really good) or unsuccessful (have trouble) (see Guralnick et al., 2002). Of special interest was the degree to which each reason reflected characteristics internal to the child or represented more external influences. Responses were coded into the following four possible categories:

1. *Internal rationale*—for rationales describing some aspect of the child that is held to be responsible for success or difficulty in the social tasks. Included here are mothers' reasons associated with their child's personality or disability-related factors, traits, dispositions, references to maturation, etc. No distinction was made with respect to how children achieved their current state (i.e., degree to which learned), but the emphasis was clearly related to existing child characteristics.
2. *Situational rationale*—for rationales related to the situation or behavioral characteristics of the child's peers. No reference was made to efforts to influence social development either directly or indirectly. Rather the emphasis was focused on the circumstances that can affect peer interactions.
3. *External indirect rationale*—for rationales related to the actions (or lack of actions) of others that generally influence peer-related social development, such as providing opportunities to practice or exercise social skills or creating a social environment that is influential (e.g., provides a secure or stable environment or has too few toys).
4. *External direct rationale*—for rationales related to actions (or lack of actions) by others designed to directly influence peer-related social development. Responses included specific reference to encouragement, instruction, or modeling.

Uncodeable and no response categories were also available. Responses in each category were averaged across the three social tasks and across situations (success and difficulty). Internal consistency (alpha) for this scale was .74. Overall, all mothers in the sample stated at least one internal rationale, 68.9% provided an external direct rationale, 71.6% at least one external indirect rationale, and 24.3% provided a situational rationale.

*Parent action: Control.* In the third section of

the Parent Social Skills Interview, questions were focused on the mother's role in facilitating a child's social interactions with peers. Three open-ended questions, one for each of the three social tasks, were presented as follows: "What things do you think a parent should do or not do to help a child \_\_\_\_ (specific social task)? The purpose here was to elicit the types of socialization strategies mothers would or would not implement. Following previous work (Booth, 1999; Mills & Rubin, 1990; Rubin & Mills, 1990), we developed a coding manual in which mothers' responses were coded in terms of the degree of control or power they would exercise in attempting to promote a child's peer-related social development (see Guralnick et al., 2002). Responses were coded into one of the following five categories:

1. *Nondirective*—responses suggesting that the parents would let the skill develop without any form of specific intervention (e.g., "Let them work things out for themselves").
2. *Indirect strategies*—strategies designed to provide experiences that are generally conducive to a child's peer-related social development. This includes enhancing a child's abilities that may relate to social skills (e.g., "Continue speech therapy for him").
3. *Direct, low power strategies*—strategies the parent uses that provide no direction to the child as to how to deal with the situation but are designed to be generally supportive. Included here are strategies intended to facilitate positive outcomes by seeking information or providing emotional assurance (e.g., "Ask if he is feeling OK"; "Introduce the children"; "Talk about friends").
4. *Direct, moderate power strategies*—socialization strategies that give the child a choice as to whether or not to comply. This is usually accomplished by providing suggestions, reasoning, or using positive approaches (e.g., praise, modeling).
5. *Direct, high power strategies*—strategies in which the parent takes control of the situation to assure a desired outcome by issuing direct commands, by force, or through aversive consequences (e.g., "I would make him give it back").

Uncodeable and no response categories were also available. All mothers' responses to the open-ended questions were recorded, but only the first five identifiable parent control socialization strat-

egies were coded. Mothers endorsed socialization strategies at least once in the direct moderate power category (100%), in the indirect category (93.2%), and in the direct low power category (71.6%). Less frequently endorsed categories were direct high power (36.5%) and the nondirective category (21.6%). However, response variability was limited for the social tasks of make friends and accepted into new group (lower power strategies dominated). Consequently, only the social task of sharing was used to index control strategies.

*Reliability.* Coders were trained separately on the coding manuals describing parent attitudes toward children's peer-related social development and maternal socialization strategies. Following extensive training, coders achieved an overall agreement of 85%. Interobserver agreement was also obtained for 100% of the interviews. Cohen's (1960) Kappa was high for both the attitude and socialization items: .91 and .83, respectively.

*Parent action: Arranging.* Data were obtained with respect to the extent to which mothers reported arranging play with peers for their child. Specifically, mothers were asked to rate how often in a typical month they were responsible for arranging for their child to play with another child according to the following scale: 1 = *less than once per month*, 2 = *less than once per week*, 3 = *1 to 2 times per week*, 4 = *2 to 3 times per week*, 5 = *4 or more times per week*. This single rated item was used for analysis.

*Parent stress.* The Parenting Stress Index (Abidin, 1995) that yields scores for a Child domain and a Parent domain. The 54 items of the Parent domain were analyzed to yield an index of dimensions of parent functioning related to effective parenting. Parents use fixed 4- or 5-point scales to assess their perceived stress in the following dimensions: (a) Depression, (b) Attachment, (c) Restriction of Role, (d) Sense of Competence, (e) Social Isolation, (f) Relationship With Spouse, and (g) Health. The Parenting Stress Index was not designed specifically for families of children with disabilities but has been administered to large samples of mothers of preschool children with disabilities, yielding logical and meaningful relationships to other factors (Bigras, LaFreniere, & Dumas, 1996; Innocenti, Huh, & Boyce, 1992; Sexton, Burrell, Thompson, & Sharpton, 1992). Reported internal consistency for the Parent domain is .89 (alpha). For our sample, the alpha coefficient was .91. Scores used in this study were

summed over the seven dimensions to yield a total Parenting Index Score for the Parent domain.

### *Social Support*

Mothers' social support was measured with the Questionnaire on Social Support (Crnic, Greenberg, Ragozin, Robinson, & Basham, 1983). Mothers respond to a series of questions in which they rate (on 4-point scales) the availability and satisfaction of various sources of support. This questionnaire results in social support scores on the following subscales: (a) Parenting Support, (b) Community Support, (c) Friendship Support, (d) Extended Family Support, and (e) Intimate Support. Separate scores for the amount of support, satisfaction with support, and a total score are obtained for each subscale. Correlations between amount and satisfaction with support for each of the subscales ranged from .56 to .70. Internal consistency (alpha) for the total support score, based on the average of the five subscales, was .76. Highly stressed mothers who report higher levels of support on this measure have been observed to display more positive maternal behavior (Crnic & Greenberg, 1990). This measure has also been used for mothers of children with developmental disabilities (Booth, 1999).

### *Constructs*

A set of scale scores was created for each of the constructs depicted in Figure 1. Descriptive statistics for construct scores and their component measures can be found in Table 1. In this section, internal consistency measures are reported for the two composite scores (child risk and child peer competence). Internal consistency for the individual measures was reported in the previous section.

*Child risk.* The child risk construct consisted of the combination of three cognitive and language measures (see Table 1). Principal factor analysis of these scores yielded a single factor that accounted for 75% of the variance (factor loadings ranged from .86 to .91). Internal consistency (alpha) for this scale with three measures was .75. In order to create a composite score for child risk in which the three measures were equally weighted, the component measures were converted into *Z* scores and then averaged. The scales were reversed so that higher scores indicated greater child risk.

*Social support.* The total support score from the Questionnaire on Social Support was used to represent this construct. As noted in Table 1, the



**Table 1.** Descriptive Statistics for Construct Scores and Component Measures

Construct scores and component measures <sup>a</sup>	Mean	SD
Child risk: composite score	0.00	0.79
WPSSI-R Full-Scale IQ	73.23	11.67
TACL-R Total Scale standard score	75.54	16.99
EOWPVT-R Expressive Language standard score	81.95	13.59
Social support: QSS Support total	2.90	0.42
Parent stress: PSI Parent domain	122.91	22.76
Parent attitude: external rationales	1.84	0.51
Parent action: control strategies	3.82	0.53
Parent action: arranging	2.11	0.92
Child peer competence: composite score	0.01	0.79
VABS Socialization Scale standard score	82.61	10.36
SSRS standard score <sup>b</sup>	80.00	13.49
Social skill ability (parent ratings)	1.56	0.41

<sup>a</sup>*N* = 74. WPSSI-R = Wechsler Preschool and Primary Scale of Intelligence-Revised, TACL-R = Test for Auditory Comprehension of Language-Revised, EOWPVT = Expressive One Word Picture Vocabulary Test-Revised, QSS = Questionnaire on Social Support, PSI = Parenting Stress Index, VABS = Vineland Adaptive Behavior Scales, SSRS = Social Skills Rating System. <sup>b</sup>*N* = 58 for SSRS (not obtained for first cohort).

mean social support score for this sample was 2.90, indicating that, on average, this sample had moderate levels of availability and satisfaction from the various sources of support.

*Parent stress.* As noted in Table 1, the mean score for the sample for the 54 items of the Parenting Stress Inventory Parent domain was 122.91. This translated to approximately the 50th percentile based on the standardization sample (Abidin, 1995).

*Parent attitude.* Scores from the four coded categories of the Attitude section of the Parent Social Skills Interview (see above) served as the basis for the parent attitude construct. Specifically, each of the four coded categories was assigned a rating (in parenthesis) in the following order: external direct (4), external indirect (3), situational (2), and internal (1). This order was assumed to represent the degree to which mothers believed their child's peer interactions were open to influence by outside factors through deliberate change. These ratings were then averaged, creating a summary score where a higher score indicates a more external rationale.

*Parent action: Control strategies.* Based on the relevant section of the Parent Social Skills Inventory (see above), each of the five coded categories for socialization strategies was assigned a rating (see parenthesis) as follows: direct high power (5), direct moderate power (4), direct low power (3),

indirect (2), nondirective (1). These ratings are assumed to represent the degree of parental control or power of the socialization strategies mothers endorse to foster children's peer interactions for the social task of sharing.

*Parent action: Arranging.* The scale score used for the parent arranging construct was a single variable.

*Child peer competence.* The child peer competence construct was based on three parent report measures (see Table 1). Two of the measures were standard scores obtained from the Vineland Socialization Scale and from the Social Skills Rating System (see above). The third measure was the average of the mother's ratings of her child's social skills with peers across social tasks from questions on the Parent Social Skills Interview (see above). Principal factor analysis of these variables revealed that a single factor accounted for 62% of the variance (factor loadings of .69 to .86). Internal consistency (alpha) for the three measures was .75. A composite score for child-peer competence with three equally weighted measures was computed by averaging the *Z* scores for each of the component measures.

## Results

The path analysis model in Figure 1 was tested using the EQS software (Bentler, 1995) follow-

**Table 2.** Matrix of Intercorrelations Among Construct Scores

Score	1	2	3	4	5	6	7
1. Child risk							
2. Social support	.17						
3. Parent stress	-.15	-.60***					
4. Parent attitude	-.08	-.11	-.01				
5. Parent: control	.14	-.20	-.01	.05			
6. Parent: arranging	-.19	.23*	-.24*	-.03	-.09		
7. Child peer competence	-.31**	.18	-.29*	-.01	-.29*	.03	

Note. *N* = 74.

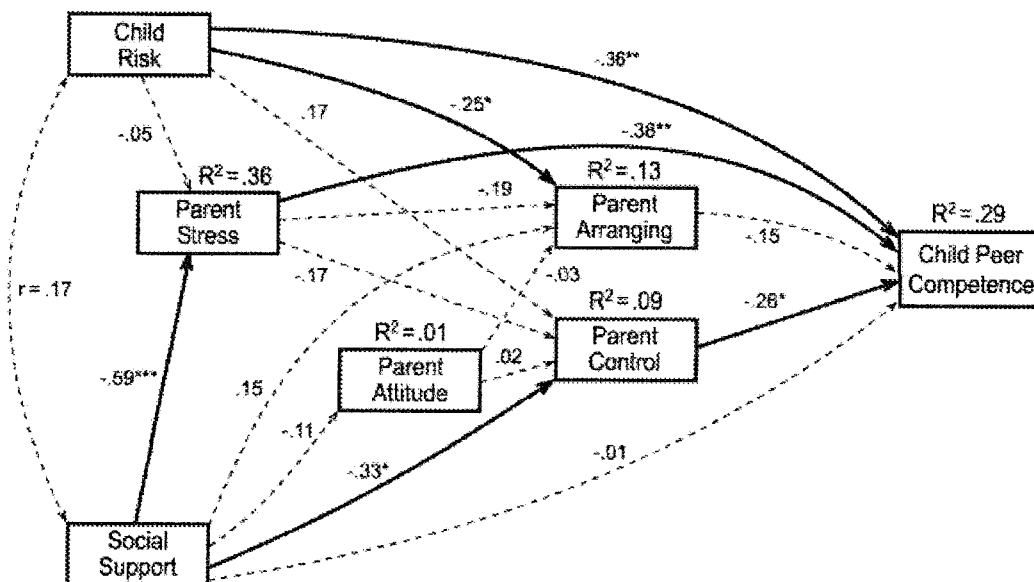
\**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

ing the maximum likelihood method, with analyses done on the covariance matrix. Given the relatively small sample size (*N* = 74) and the fact that some of our constructs had only one indicator, we chose not to use latent variable path analysis. The EQS provides goodness-of-fit indices to evaluate how well the model fits the data.

Intercorrelations among the construct scores included in the path analysis are shown in Table 2. The full theoretical model (see Figure 1) was specified with five equations, one for the prediction of each of the endogenous (dependent) variables: parent stress, parent attitude, parent control, parent arranging, and child-peer competence. Free covariances were specified for the two exogenous (independent) variables: child risk and social support.

The results of the full path analysis are shown in Figure 2. Nonsignificant paths are presented as dashed lines. However, the estimates presented in the figure are based on a path analysis of the full model. All of the paths that were nonsignificant also showed nonsignificant zero-order correlations, except for both social support and parent stress with parent arranging (Table 2). In Figure 2, the numbers on the paths are the standardized betas (regression coefficients), and the asterisks indicate the level of significance determined by *Z* tests, *p* < .05, *p* < .01, *p* < .001. Above the box for each dependent variable, the *R*<sup>2</sup> represents the proportion of variance accounted for in the dependent variable by the preceding paths.

Results of the path analysis show a significant direct path from social support to parent stress,



**Figure 2.** Path analysis model for predictors of child peer competence. Dashed lines indicate nonsignificant paths.

beta =  $-.59$ ,  $p < .001$ . Significant direct paths to the parent action constructs consisted of a path from social support to parent control, beta =  $-.33$ ,  $p < .05$ , and a path from child risk to parent arranging, beta =  $-.25$ ,  $p < .05$ . Child-peer competence was predicted by three paths: child risk, beta =  $-.36$ ,  $p < .01$ , parent stress, beta =  $-.38$ ,  $p < .01$ , and parent control, beta =  $-.26$ ,  $p < .05$ . No significant paths were associated with the parent attitude construct. The two exogenous variables (child risk and social support), which were allowed to be correlated in the analysis, showed a nonsignificant positive correlation. The percentage of variance accounted for in each dependent variable by the preceding paths was 36% for parent stress, 1% for parent attitude, 9% for parent control, 13% for parent arranging, and 29% for child peer competence. The goodness-of-fit indices indicated that the model fit the data well. The chi-square test for the full model was not significant,  $\chi^2(4) = 1.27$ ,  $p = .85$ , indicating a good fit. The Bentler-Bonett normed fit index is .98, and the comparative fit index (CFI) is 1.0.

Two additional issues that have relevance to this model also were addressed in our analyses. First, we were interested in whether our results were related to the fact that we included children with relatively high cognitive levels (FSIQ > 85) in our sample. The path model was recalculated with the 14 children achieving FSIQs above 85 eliminated. The results indicated that all associations and significant paths remained unaltered. Second, we were interested in whether gender played a role in our findings. Analyses of gender differences ( $t$  tests) on the construct scores were not significant, even at  $p$  less than .10. Nevertheless, trends toward gender differences were apparent for some of the correlations among the constructs. However, with only 19 girls and 55 boys in the sample, we were not able to test the fit of the model for girls and boys separately.

## Discussion

The results of this study provide additional support for the importance of family influences on the peer-related social competence of young children with mild developmental delays. Beyond child risk, both parent stress and parent action in the form of socialization strategies related to control have direct paths to child peer competence. With the exception of parent attitude, all theoretical constructs yielded significant paths and these

paths followed predicted relationships. As noted, indices of fit suggested a high degree of confidence in the overall model.

The finding that greater parent stress is associated with lower peer competence may well be due to a number of parent-child interaction processes not evaluated in this study (see Parke et al., 1994). The dimensions of parent stress, such as difficulties in attachment, concerns about competence in the parenting role, tendencies toward isolation, and feelings of depression, are among the factors that can impair the quality of parent-child interactions and likely affect peer competence as well (Guralnick & Neville, 1997). Future work, especially detailed observational studies of parent-child interactions, will be needed to identify the precise mechanisms through which parent stress exerts its influence on child-peer competence for this group of children.

Of considerable interest is the fact that the peer competence of children with mild developmental delays was lower for mothers who endorsed more controlling or higher power socialization strategies. Our results, however, do not address the important issue of the direction of effect. It is quite possible that mothers were responding to aspects of their child's functioning and making adjustments they believed were warranted to encourage and foster their child's social interactions with peers (Marfo, 1990). If this is the case, mothers are not simply responding to their child's cognitive and language development, as these were accounted for in the path analysis, nor were they responding to their child's behavior problems. A separate assessment of children's behavioral problems as evaluated using the Child Behavior Checklist (Achenbach, 1991) was not found to be correlated with parent control. It is quite possible, of course, that mothers are responding to other characteristics of their children or to interaction patterns that are more closely linked to their child's social skills. Independent assessments of these characteristics or child interaction patterns would be needed to evaluate this hypothesis.

Alternatively, mothers may inadvertently be contributing to their child's lower peer competence by utilizing unnecessarily controlling socialization strategies, thereby reducing their children's opportunities for testing their skills and developing their peer-related social competence. The fact that only a small proportion of mothers endorsed high power strategies argues against this hypothesis, but it may well be relevant at least for

a subgroup of families (see Mahoney et al., 1990). Relatedly, and as expected, lower levels of social support were associated with more controlling strategies. This finding must be interpreted cautiously, however, because the univariate correlation was not significant,  $p < .10$ . Longitudinal studies of these factors will assist in disentangling the direction of these effects. Similarly, assessments of the quality of the socialization strategies, their appropriateness to the setting and circumstances, and their affective nature will further contribute to our understanding of this critical but complex issue (Landry, Garner, Pirie, & Swank, 1994; Landry, Smith, Swank, & Miller-Loncar, 2000; Roach, Barratt, Miller, & Levitt, 1998).

In contrast to socialization strategies, parent action as represented by the extent to which mothers arranged play with peers for their child was not associated with child peer competence. Although more extensive arranging can be of value for typically developing children (Ladd & Goller, 1988), this does not appear to be the case for young children with mild developmental delays. Perhaps arranging will only be effective in promoting peer competence if other favorable circumstances exist, including skillful structuring of play by parents and the availability of compatible and willing play partners. It is also possible that a threshold level of arranging is necessary to yield an effect on child-peer competence. As noted earlier, previous work has found that mothers of children with mild delays arrange play less often than do mothers of typically developing children (Guralnick et al., 2002). As seen in Figure 2, it is also the case that mothers arrange less for children at higher risk. Alternatively, it may be that other, more direct and extensive measures of arranging, such as parent logs, will yield a different pattern of associations.

Parent attitude with respect to reasons why children are successful or unsuccessful in relating with peers was the only construct without significant paths. Perhaps the reasons our hypotheses were not confirmed may be related to the fact that mothers attributed their child's peer social development primarily to internal causes. The limited variability found in this study may have masked any associations with other constructs. The predicted associations between parent attitude, social support, and parent actions were tentative at best, but the absence of any associations was unexpected. Future work is needed in which parent attitudes are evaluated in far more sophisticated

and perhaps direct ways than was the case in this investigation.

Finally, the inverse relationship between child risk and peer competence is consistent with child-specific social information processing and language difficulties that underlie important features of children's peer-related social competence (Guralnick, 1999a). The absence of an association between child risk and parent stress, though not predicted, was nevertheless a weak hypothesis (e.g., Krauss, 1993). Clearly, the availability of social support and related resources appears to be closely associated with parent stress for this group of children.

Measurement concerns extend to many aspects of this study. The need for a more refined measure of parent attitude has already been noted. In addition, the degree to which parent actions, as assessed by parent report through structured interviews, corresponds with actual parent behavior is an issue that must be considered. In the domain of peer-related social development, parent knowledge has been shown to be related to relevant aspects of parent behavior (Mize et al., 1995), and parents' discussions of what they would do with respect to advice to their child for the peer group entry social task are related to corresponding parent socialization strategies (Finnie & Russell, 1988). Nevertheless, the correspondence between the specific parent report measures in this study involving children with delays and actual parent behavior remains to be established. In fact, many of the constructs could benefit from more direct observational measures, particularly socialization strategies and child-peer competence. Observational measures distinguishing among various dimensions of parent-child interactions (e.g., scaffolding, responsivity, affective warmth) also may help elucidate possible family mediators of child-peer competence within a broader developmental framework. Moreover, given the dependence of this study on parental report for most of the constructs, common method variance may account for some of the associations that have been obtained. Future work emphasizing direct observational measures for key constructs would be able to address this issue. Finally, some gender differences are to be expected in the area of peer-related social development (Hastings & Rubin, 1999; Rubin, Coplan, Nelson, Cheah, & Lagace-Seguin, 1999). However, as noted, we did not find gender differences for the construct scores. Nevertheless, trends toward gender differences were apparent

for some of the correlations among the constructs, further suggesting the need for additional work in which a larger sample of girls could be obtained to allow possible differences to be detected.

It is also important to emphasize that children with clinically significant behavior problems and mothers experiencing substantial stress were not included in this sample. Consequently, it is unclear whether this model is applicable to this group of children and families. Also, as noted, our results are not related to the fact that we included children with relatively high cognitive levels ( $FSIQ > 85$ ) in our sample.

Taken together, there are a number of implications of this study relevant to the substantial peer-related social competence problems exhibited by young children with mild developmental delays discussed earlier. In particular, increased confidence should be placed in an intervention model derived conceptually and empirically from work on families of typically developing children and modified to account for the unique stressors facing families of children with disabilities. This implies not only the relevance of a developmental framework for children with delays (see Guralnick, 1998), but, most importantly, the need for a comprehensive family and child approach to foster children's peer-related social competence. Unquestionably, longitudinal and intervention studies will be needed to evaluate causal relations hypothesized to exist in this investigation, but the consistency and logical patterns of relationships obtained provide at least tentative support for developing interventions to promote peer-related social competence that consider family influences, including parent stress, social support, and specific forms of parent actions.

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